

**Amendment**

Applicant: Joseph G. Marcinkiewicz  
Serial No.: 09/738,467  
Filing Date: December 15, 2000  
Docket: K315.106.101  
Title: BRUSHLESS MACHINE CONTROL

**IN THE SPECIFICATION:**

Please amend the paragraph beginning at page 3, line 23, as follows:

C1

In operation, a current demand  $i_D$  on line 42 is provided to the controller and this regulates the current in the windings, according to the particular control scheme adopted, to produce the desired output from the machine. Those skilled in the art will be familiar with the many variations of current controllers which exist, each of which has its own merits, but all of them suffer from the problems of non-linearity between the controlled variable and the machine output described above. In practice, it also has been realized, current control is particularly sensitive to variations in the machine.

Please delete the paragraph beginning at page 3, line 30, which starts with "It has been recognized".

Please delete the paragraph starting at page 4, line 8, which starts with "In practice, it has".

Please add the following two new paragraphs immediately following the "Summary of the Invention" heading at page 4, line 28:

C2

It has been recognized by the inventor that the more fundamental control variable in a switched reluctance machine is the flux which is set up in the magnetic circuit in the machine

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when a phase winding is energized. The flux is directly responsible for the force which acts on the rotor to urge it to a position of minimum reluctance, i.e. to pull the rotor round, with respect to the energized stator poles. Embodiments of this invention use closed-loop real-time determination and control of flux to achieve much better performance from the machine than has hitherto been possible with closed-loop control of current.

It has been found that flux control is substantially dependent only on the flux-causing voltage across the phase winding(s). Thus, it is found to be more tolerant of variations in the machine. Many of the practical uncertainties arising from the manufacturing variations to which current control is prone are simply avoided.

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